



# Legionnaires' Disease: Enhancements to Healthcare Associated Case Investigations

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# How is a Legionnaires' disease case identified?

- Most disease and outbreaks are caused by *Legionella pneumophila* serogroup 1
- Legionellosis is a reportable disease in Missouri.
- Reports are typically received from medical providers and laboratories.
- Public health agencies follow up to determine if the illness meets the case definition for Legionnaires' disease.

Legionnaires' disease	
Clinical features	Fever, myalgia, and cough (according to the <a href="#">CSTE* case definition</a> )  These symptoms are typical but not required; additional symptoms (e.g., shortness of breath, headache, confusion, nausea, diarrhea) may be present
Pneumonia (clinical or radiographic)	Yes

# Defining Healthcare-Associated Exposures

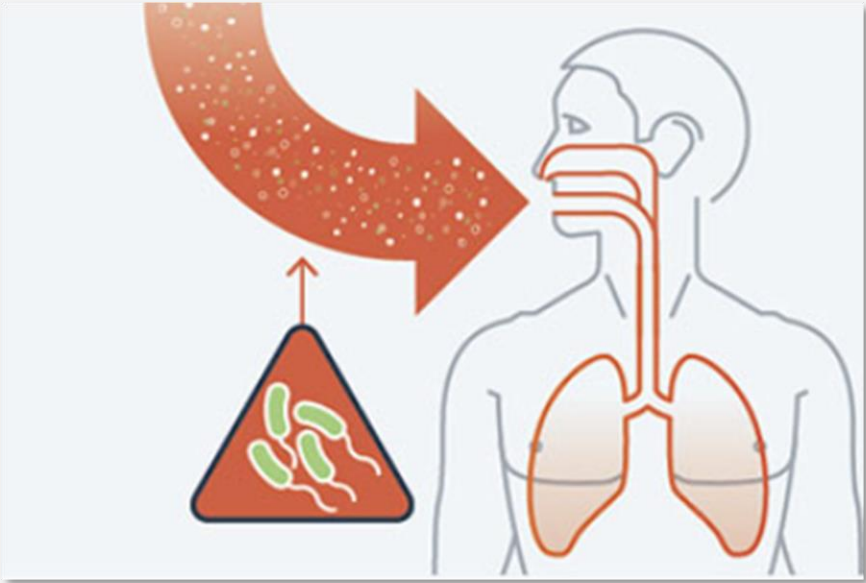
Hospitals	Long-term care facilities	Clinics <sup>1</sup>
<ul style="list-style-type: none"><li>• Acute care hospitals (general or specialty)</li><li>• Long-term acute care hospitals</li><li>• Critical access hospitals</li><li>• Children's hospitals</li><li>• Psychiatric hospitals</li></ul>	<ul style="list-style-type: none"><li>• Skilled nursing facilities</li><li>• Nursing homes</li><li>• Inpatient hospice</li><li>• Rehabilitation hospitals</li><li>• Psychiatric residential treatment facilities</li></ul>	<ul style="list-style-type: none"><li>• Outpatient clinics<sup>2</sup>: general and specialty</li><li>• Ambulatory (same day) surgery centers<sup>2</sup></li><li>• Outpatient rehabilitation clinics</li><li>• Dialysis centers</li></ul>

<sup>1</sup> Examples of specialty clinics include outpatient cancer treatment centers, outpatient infusion centers, dental offices, or subspecialist offices that provide clinical care not affiliated with a hospital. Other healthcare facilities not listed here include associated sites such as pharmacies and outpatient laboratories.

<sup>2</sup> If a clinic visit or same-day surgery occurs within a hospital, the setting for that exposure is hospital, not clinic.

- **Definite Healthcare-Associated:** the patient spent the entire 10 days before the date of symptom onset in a healthcare facility
- **Possible Healthcare-Associated:** the patient spent a portion of the 10 date of symptom onset in a healthcare facility

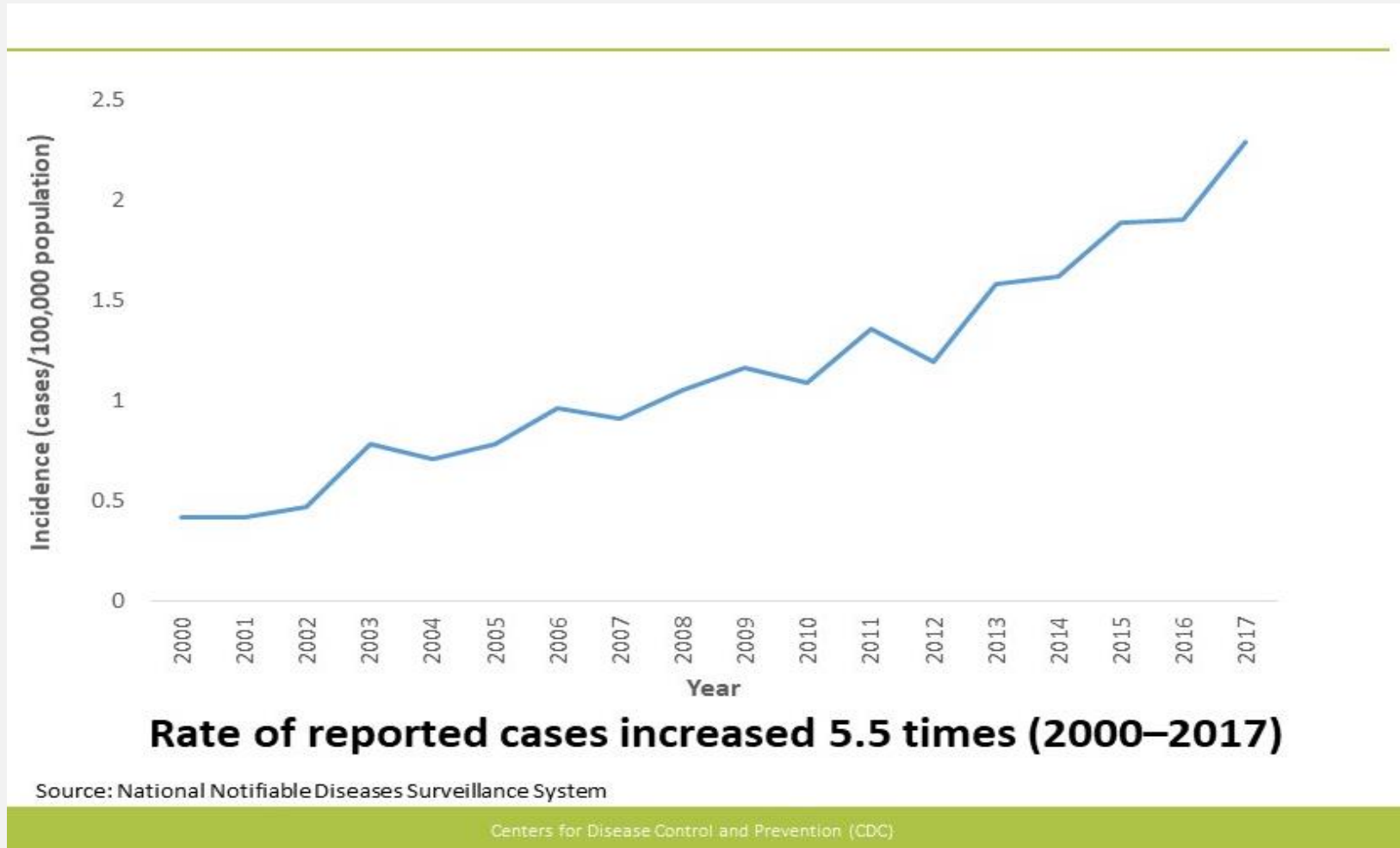
# Transmission and Epidemiology



- Those most likely to develop Legionnaires' disease following an exposure are:
  - Current or former smokers
  - People with a chronic lung disease such as emphysema or chronic obstructive pulmonary disease (COPD)
  - People with a weakened immune system from diseases like cancer, diabetes, or kidney failure
  - People who take medication that weakens the immune system
- Case Fatality Rate
  - 10% in general population
  - 25% in healthcare-associated cases

# Epidemiology of Legionnaires' Disease

## *Current Trend*



# Public Health Authorities

## *Chapter 192.020, RSMo.*

192.020.1. It shall be the general duty and responsibility of the department of health and senior services to safeguard the health of the people in the state and all its subdivisions. It ... **shall make and enforce adequate orders, findings, rules and regulations to prevent the spread of such diseases** and to determine the prevalence of such diseases within the state. ...

## *19 CSR 20-20.040*

- (1) The director shall use the legal means necessary to control, investigate, or both, any disease or condition ... which is a threat to the public health.
- (2) It shall be the duty of ... the director of the Department of Health ... to—
  - (A) Inspect any premises that they have reasonable grounds to believe are in a condition conducive to the spread of the disease; ...
  - (C) Collect ... any samples or specimens that may be necessary ...;
  - (G) Establish appropriate control measures which may include ... disinfection, ... closure of establishment, notification to potentially exposed individuals ... notification to the public ... and other measures considered by the department and/or local health authority as appropriate disease control measures ...

# Steps in a Full Investigation

- Perform Retrospective Review of Cases
- Develop Line List
- Identify New and Recent Patients
- Obtain Post-Mortem Specimens
- Implement Immediate Control Measures
- Environmental Assessment
- Environmental Sampling
- Remediation of Possible Environmental Sources
- Develop and Implement Communications Plan
- Determine Duration of Enhanced Surveillance and Sampling
- Assist Facility with Developing Water Management Plan
- Subtype and Compare Clinical and Environmental Isolates
- Assess the Effectiveness of Implemented Measures

# Other Areas for Development

- 2020 Case Definition Change
- Travel Associated
- Public Notification Standards
- Public Drinking Water
- Guidance Documents and Training



# Questions????

If you have questions or concerns, feel free to contact us at:

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